FIG. 1

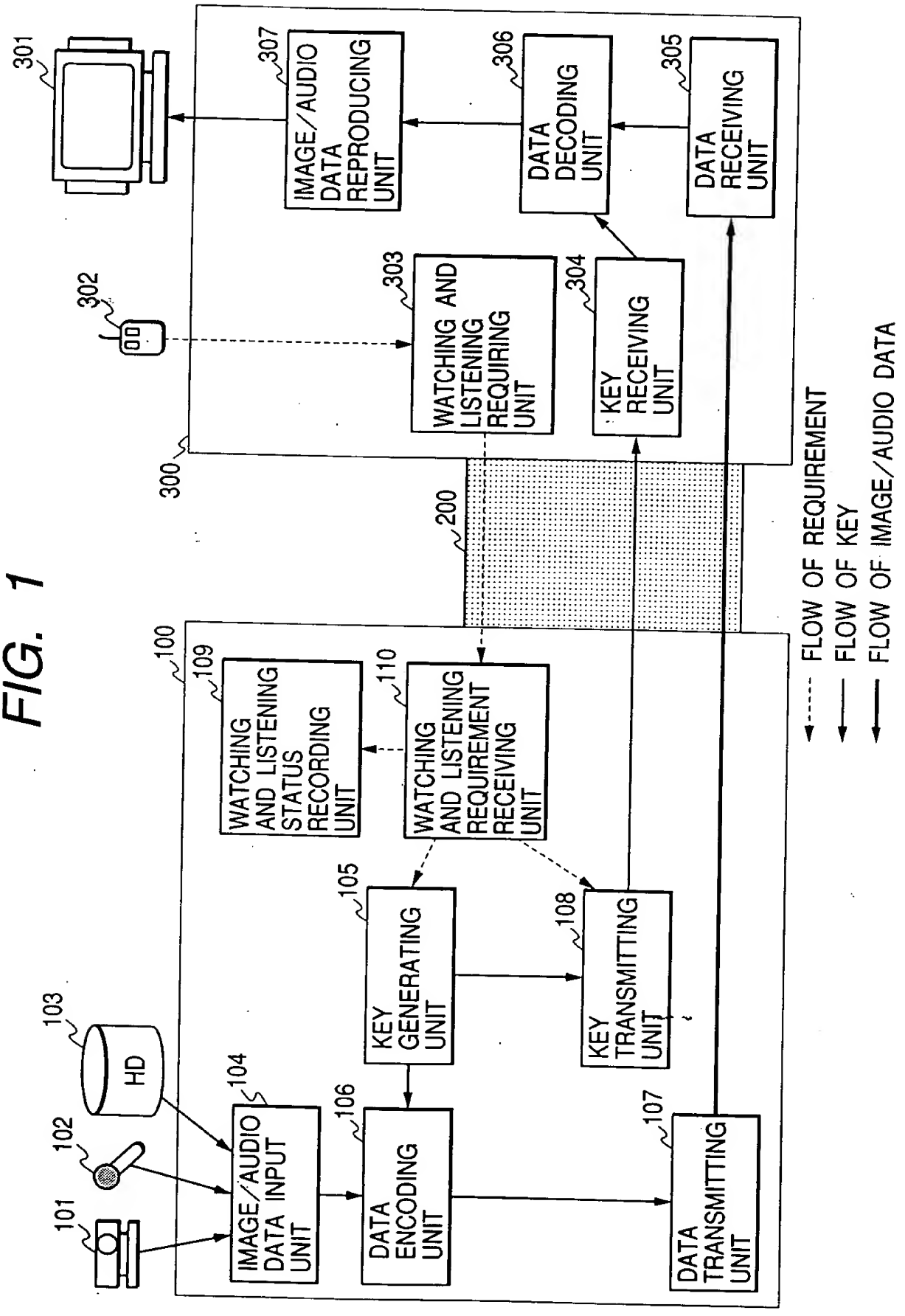

101
102
103
HD
104
IMAGE/AUDIO DATA INPUT UNIT
106
DATA ENCODING UNIT
107
DATA TRANSMITTING UNIT
105
KEY GENERATING UNIT
108
KEY TRANSMITTING UNIT
109
WATCHING AND LISTENING STATUS RECORDING UNIT
110
WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT
100
200
300
301
302
303
WATCHING AND LISTENING REQUIRING UNIT
304
KEY RECEIVING UNIT
305
DATA RECEIVING UNIT
306
DATA DECODING UNIT
307
IMAGE/AUDIO DATA REPRODUCING UNIT
FLOW OF REQUIREMENT
FLOW OF KEY
FLOW OF IMAGE/AUDIO DATA

FIG. 2

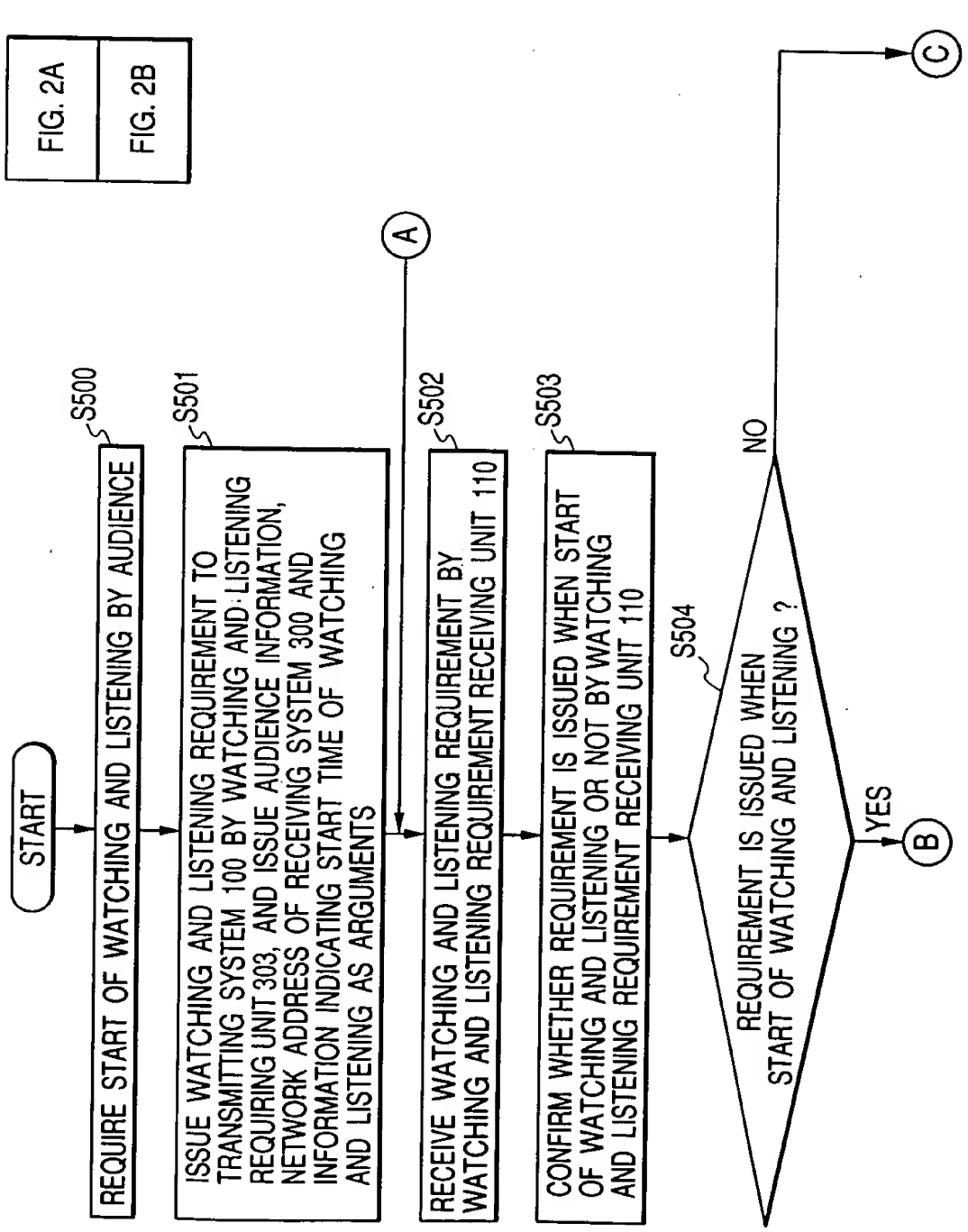


FIG. 2A
FIG. 2B

FIG. 2A

START
S500
REQUIRE START OF WATCHING AND LISTENING BY AUDIENCE
S501
ISSUE WATCHING AND LISTENING REQUIREMENT TO TRANSMITTING SYSTEM 100 BY WATCHING AND LISTENING REQUIRING UNIT 303, AND ISSUE AUDIENCE INFORMATION, NETWORK ADDRESS OF RECEIVING SYSTEM 300 AND INFORMATION INDICATING START TIME OF WATCHING AND LISTENING AS ARGUMENTS
A
S502
RECEIVE WATCHING AND LISTENING REQUIREMENT BY WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110
S503
CONFIRM WHETHER REQUIREMENT IS ISSUED WHEN START OF WATCHING AND LISTENING OR NOT BY WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110
S504
REQUIREMENT IS ISSUED WHEN START OF WATCHING AND LISTENING ?
NO
C
YES
B

FIG. 2B

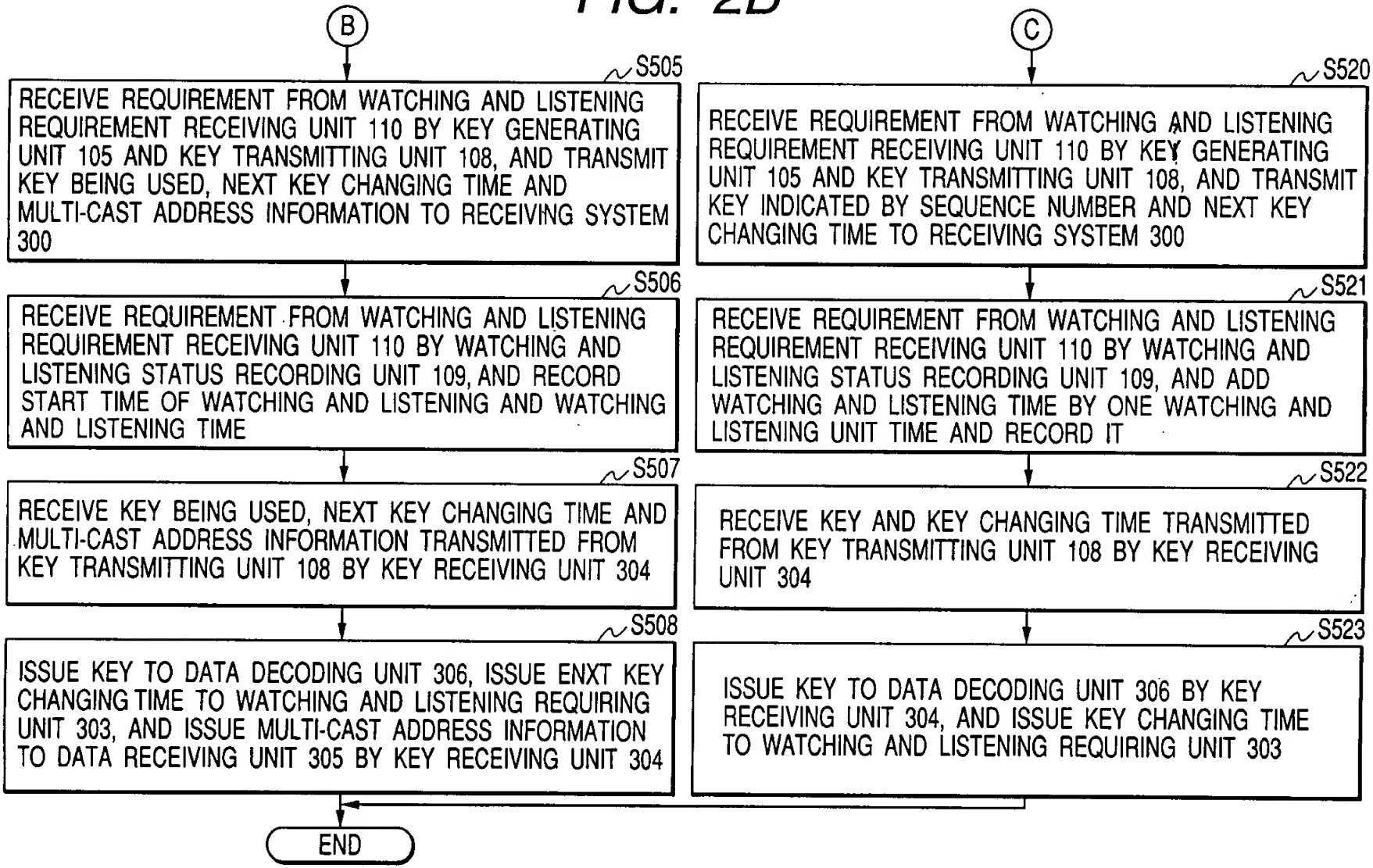
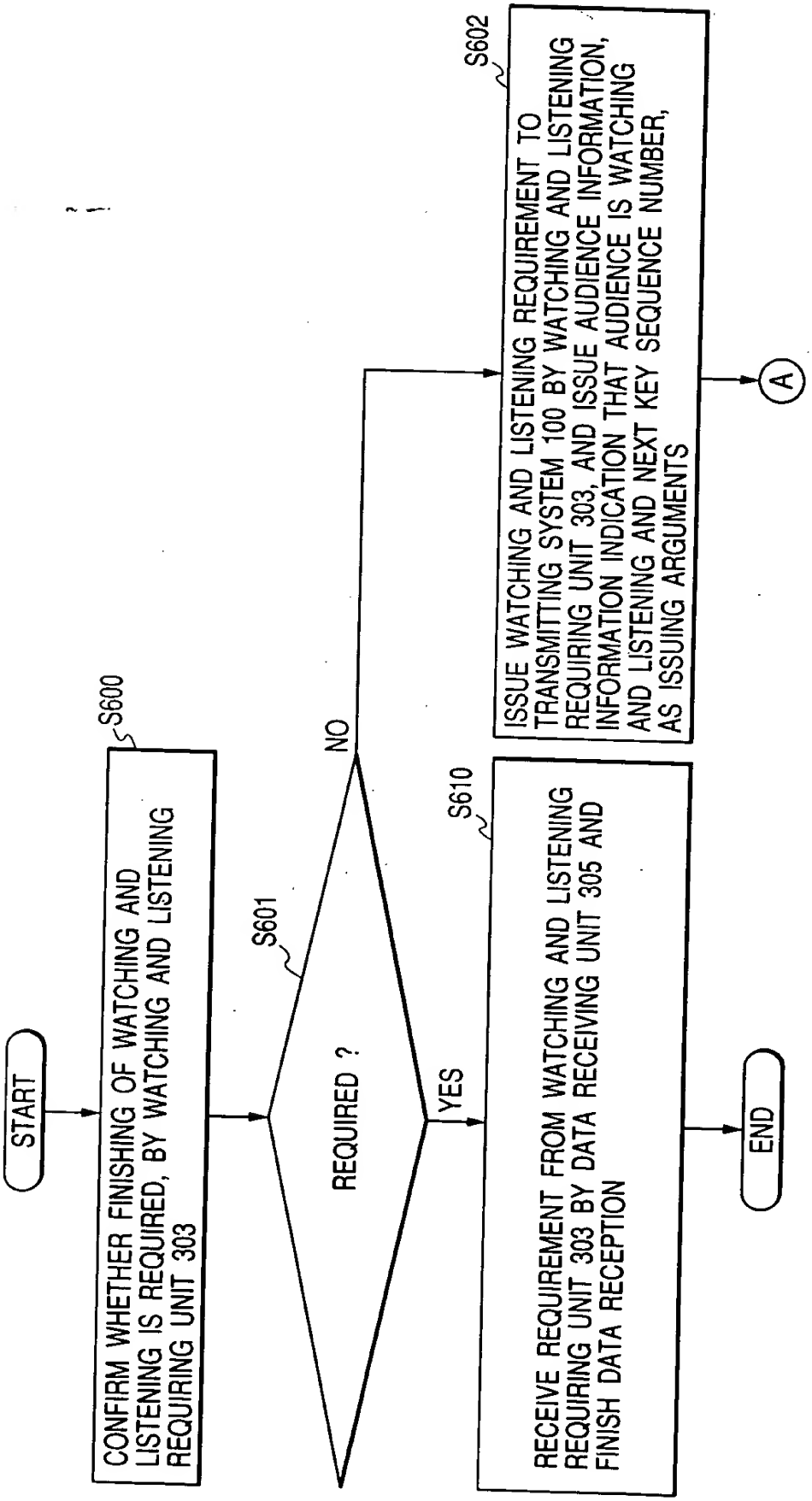

B
S505
RECEIVE REQUIREMENT FROM WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110 BY KEY GENERATING UNIT 105 AND KEY TRANSMITTING UNIT 108, AND TRANSMIT KEY BEING USED, NEXT KEY CHANGING TIME AND MULTI-CAST ADDRESS INFORMATION TO RECEIVING SYSTEM 300
S506
RECEIVE REQUIREMENT FROM WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110 BY WATCHING AND LISTENING STATUS RECORDING UNIT 109, AND RECORD START TIME OF WATCHING AND LISTENING AND WATCHING AND LISTENING TIME
S507
RECEIVE KEY BEING USED, NEXT KEY CHANGING TIME AND MULTI-CAST ADDRESS INFORMATION TRANSMITTED FROM KEY TRANSMITTING UNIT 108 BY KEY RECEIVING UNIT 304
S508
ISSUE KEY TO DATA DECODING UNIT 306, ISSUE ENXT KEY CHANGING TIME TO WATCHING AND LISTENING REQUIRING UNIT 303, AND ISSUE MULTI-CAST ADDRESS INFORMATION TO DATA RECEIVING UNIT 305 BY KEY RECEIVING UNIT 304
END
C
S520
RECEIVE REQUIREMENT FROM WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110 BY KEY GENERATING UNIT 105 AND KEY TRANSMITTING UNIT 108, AND TRANSMIT KEY INDICATED BY SEQUENCE NUMBER AND NEXT KEY CHANGING TIME TO RECEIVING SYSTEM 300
S521
RECEIVE REQUIREMENT FROM WATCHING AND LISTENING REQUIREMENT RECEIVING UNIT 110 BY WATCHING AND LISTENING STATUS RECORDING UNIT 109, AND ADD WATCHING AND LISTENING TIME BY ONE WATCHING AND LISTENING UNIT TIME AND RECORD IT
S522
RECEIVE KEY AND KEY CHANGING TIME TRANSMITTED FROM KEY TRANSMITTING UNIT 108 BY KEY RECEIVING UNIT 304
S523
ISSUE KEY TO DATA DECODING UNIT 306 BY KEY RECEIVING UNIT 304, AND ISSUE KEY CHANGING TIME TO WATCHING AND LISTENING REQUIRING UNIT 303

FIG. 3


START
S600
CONFIRM WHETHER FINISHING OF WATCHING AND LISTENING IS REQUIRED, BY WATCHING AND LISTENING REQUIRING UNIT 303
S601
REQUIRED ?
NO
YES
S602
ISSUE WATCHING AND LISTENING REQUIREMENT TO TRANSMITTING SYSTEM 100 BY WATCHING AND LISTENING REQUIRING UNIT 303, AND ISSUE AUDIENCE INFORMATION, INFORMATION INDICATION THAT AUDIENCE IS WATCHING AND LISTENING AND NEXT KEY SEQUENCE NUMBER, AS ISSUING ARGUMENTS
A
S610
RECEIVE REQUIREMENT FROM WATCHING AND LISTENING REQUIRING UNIT 303 BY DATA RECEIVING UNIT 305 AND FINISH DATA RECEPTION
END